

TROUBLESHOOTING/FAQ's

Q.THE ENGINE WILL NOT START.

A. Check all connections to ensure that they are tight and in the proper locations. Check the engine timing to ensure the distributor was installed correctly. Make sure the firing order is correct on the cap.

B. Make sure the distributor's Red wire is getting full battery voltage with the key "ON" and while cranking. Jumping the Red wire to battery positive is a quick test to assure the red wire is getting full voltage. For detailed voltage test steps please visit: www.PerTronix.com/Loaded-voltage-and-ground-test

C. Be sure the distributor housing is getting a good ground back to battery negative. The resistance from distributor housing to battery negative should be less than 0.2 ohms.

D. Remove all other wires from the coil negative except the distributor's Black wire. Turn key "ON" and check the coil positive for voltage. If the coil does not have voltage the coil was wired incorrectly. If coil positive has voltage try starting the engine. If the engine starts then one of the wires removed from the coil negative terminal is shorted to ground.

Q.THE ENGINE STARTS BUT STOPS AFTER RUNNING. BUT WILL RESTART AFTER SOME TIME(COOLS DOWN) HAS PASSED.

A. This type of problem can happen within minutes of startup or hours later. The most common reason is a voltage issue to the distributor's Red wire. Please go to the loaded voltage test above and download the steps. Do the test on a cold engine then again after the engine is at full operating temperature. The two voltage readings should be within a couple of volts and never go below the minimum voltage. A large(3+volts) change in the voltage reading means a connection in the ignition wire is poor or a resistor is in the ignition line.

B. Try another coil.

Q. HOW DO I CHECK A COIL'S PRIMARY RESISTANCE?

A. A digital VOM (volt/ohmmeter) will be needed. Almost all analog/needle style VOM will not work. Remove all wires from the coil. Set the VOM to the lowest OHM scale. Attach leads from the VOM to the coil's (+)&(-) terminals. The meter should display the primary resistance value of the coil. If no reading is displayed try a different scale setting on VOM. ALL GOOD coils have primary resistance so, no reading normally means a defective coil.

Q. HOW CAN I RECEIVE ADDITIONAL HELP OR ALTERNATIVE WIRING DIAGRAMS?

A. Visit our knowledge base at www.pertronix.com Or call our Technicians (913) 808-2376 Mon-Fri 8AM-6:30PM CT

LIMITED WARRANTY

PerTronix, LLC. Warranty is to the original Purchaser that its Ignition products shall be free from defects in material and workmanship (normal wear and tear excluded) for the following periods:

Ignitor, Ignitor II, Ignitor III – 30 months

Industrial Distributor – 90 days mechanical/30 months Ignitor

Flame-thrower coils – 90 days

Flame-Thrower HEI distributors – Limited 1 year

Flame-Thrower Billet and Cast distributors – 1 year Mechanical/30 months Ignitor module

Flame-Thrower Spark plug wire – Limited Lifetime

Ignition Boxes (second strike, Rev Limiter, & Digital HP) – Limited 1 year

All warranty periods start on the date of purchase

All returns must have a Return Material Authorization (RMA) number issued to them before being returned. To obtain an RMA number please contact PerTronix Technical Department at (913) 808-2376.

When returning, leave all wires at the length in which they have been installed. Include a copy of receipt, detailed account of the problems experienced and RMA number. All warranties are to be returned prepaid shipping and PerTronix will return the product prepaid.

If within the period of the foregoing warranty PerTronix finds after inspection, it was used in a normal/proper manner, consistent with PerTronix instruction, and the product or any component thereof is defective.

PerTronix will, at its option, repair such products or components or replace them with identical or similar parts.

THE FOREGOING LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE FURNISHING OF A REPAIR OR REPLACEMENT COMPONENT OR COMPONENTS SHALL CONSTITUTE THE SOLE REMEDY OF PURCHASER AND THE SOLE LIABILITY OF PerTronix LLC WHETHER ON WARRANTY CONTRACT OR FOR NEGLIGENCE AND IN NO EVENT WILL PerTronix LLC BE LIABLE FOR MONEY DAMAGES WHETHER DIRECT OR CONSEQUENTIAL.



(913) 808-2376

www.pertronixbrands.com

PERTRONIX

IGNITION PRODUCTS

IGNITOR
ELECTRONIC IGNITION

INSTRUCTIONS for Part Number:

1141, 11410, 1164, 1165, 11650, 1181, 11810,

GENERAL INFORMATION ZA1181

- **IMPORTANT:** Read all instructions before starting installation
- For 12-Volt **NEGATIVE** ground applications only. Maximum voltage 16V; Minimum voltage 8V.
- **WARNING: DO NOT USE WITH SOLID CORE SPARK PLUG WIRES; RFI SUPPRESSION SPARK PLUG WIRES MUST BE USED**
- **INCORRECT** wiring of Ignitor red & black wire **OR** leaving the key in the run position without the engine running for an extended period can damage the unit.
- **EIGHT** cylinder engines require a **MINIMUM** of 1.5 ohms of primary resistance. **FOUR** and **SIX** cylinder engines require a **MINIMUM** of 3.0 ohms of primary resistance in the ignition circuit.
- An external resistor is not required when the coil has the minimum primary resistance required for the application.
- The Ignitor can trigger most external ignition systems that can be triggered with a square wave/points trigger. Spark plug gap can be opened .005" over stock.

PART LIST

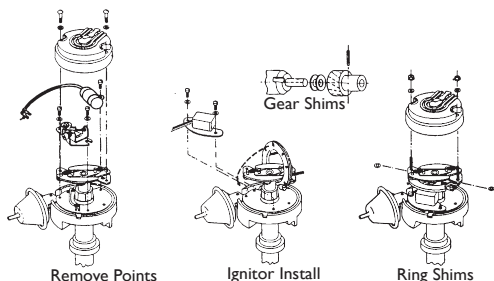
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|------------------------|--------------------------|--|
| • (1) Ignitor on plate | • (1) Wire grommet | • REMOVAL OF THE DISTRIBUTOR IS REQUIRED TO INSTALL KIT |
| • (1) Magnet ring | • (2) .050" Small shims | |
| • (2) 6-32" Kep nuts | • (2) .032" Large shims | |
| • (8).032" Small shims | • (2) #10 Ring terminals | |

INSTALLATION

- Remove the cap from the distributor. Making sure to not disconnect the spark plug wires from the cap. **NOTE:** Examine the cap and rotor for wear or damage. Replace as needed.
- Disconnect the points wire from the terminal on the ignition coil. While leaving all other wires connected to the coil.
- Crank the engine until the rotor is aimed at a fixed point on the engine or firewall. Note the rotor position by making marks. Then remove the distributor from the engine.
- Remove the points, condenser and points wire from the distributor. Do not remove the internal ground wire. The points wire grommet gets pushed inward and pulled out through the top of the distributor. Note: The screws for the points will be reused during install.
- Clean all dirt, corrosion, and oil from point cam and mounting location of the breaker plate. Make sure the mechanical advance, ground wire, and springs are in good working order. Replace as needed
- Install the magnet ring by turning it on its side and slipping over mechanical advance. Insert the two 6-32" studs up through the two thread holes used for screwing down the rotor. Using the 6-32" nuts temporarily secure the magnet sleeve to the mechanical advance. **NOTE:** 1165 kit requires a special alignment of

ring. Next to one of the studs, a notch is cut into ring, line this stud up with the square cut out in the advance weight mechanism for the correct firing pattern for Odd Fire Engines.

- Install the Ignitor plate over the points locating dimple, secure Ignitor using the points screws. If the ground wire was hooked to the points be sure to reinstall. Note: Early Delco distributor had the dimple located in a different location. **A** hole will need to be drilled into the Ignitor plate to allow it to seat flat. **DUAL** point distributor requires the Ignitor to be mounted in the place of the leading set of points.
- The air gap is set approx. at 0.010" on the low end and 0.060" on the high end. The air gap will change while rotating the shaft and does not affect Ignitor. The goal is to stay within the air gap specs at all times, making sure the magnet never hits the Ignitor module.
- While pulling down the distributor shaft rotate the shaft and make sure the magnet ring does not rub the Ignitor. If it rubs on the Ignitor, carefully bend the Ignitor plate down until it clears. Measure the gap between the Ignitor face and bottom of the magnet ring at it's largest gap. For **CCW** distributors: If the largest gap is not greater than 0.060" skip down to rotor install. Note: To bend the Ignitor plate use pliers at the bracket so as not to loosen the rivets.
- If the gap is greater than 0.060". The gap is adjusted by installing the small shims on the studs of the magnet sleeve between the ring and bottom of the mechanical advance. It is necessary to remove Ignitor and ring to install shims. Add the needed shims to get the air gap under 0.060". Using the same number of shims on each stud. For **CCW** distributors: Once set skip down to rotor install.
- Next, push up the distributor shaft and rotate. If the highest point between the Ignitor and magnet ring is greater than 0.060", shims will need to be added between gear and distributor housing. The shims are approx. 0.032" thick. Using the large shims, add need shims tell the gap is under 0.060". Note: The distributor shaft needs .008"-.010" of end play.
- Rotor install: Once the air gap is set. Remove 6-32" nuts on the magnet sleeve and install the rotor over the studs on the magnet sleeve. Reinstall the 6-32" nuts and secure the rotor. Double-check gap, if readjustment is needed repeat steps. Note: Over tighten the nuts can make the ring warp, affecting the air gap.
- Install the round rubber grommet into the points wire exit hole in the bottom of the distributor. Feed the wires through the hole in the distributor the wire exit hole. Adjust the Ignitor wires so they do not contact any moving parts and do not have an excess amount of wire inside the distributor.
- Reinstall the distributor in the engine making sure the rotor lines up with the marks.
- Recheck the install making sure all is secure and correct. Reinstall cap. After installing the cap, ensure the spark plug wires are seated securely in the distributor cap.



WIRING

- Many vehicles came equipped with a ballast resistor or resistance wire. To achieve optimum performance we recommend the removal of all external resistance, allowing the coil to receive full running voltage. When running a new

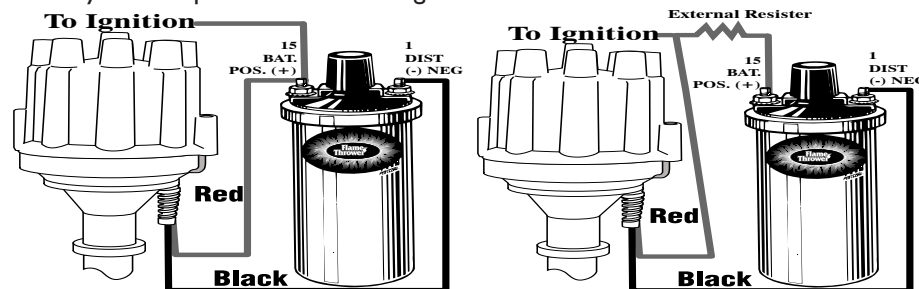
ignition wire or bypassing a resistor use 12-14 gauge wire. Using power relay **P/N: 2001** is an easy way to bypass resistors to ensure full voltage.

- With no external resistors, the coil must meet the **MINIMUM** primary resistance **REQUIRED** in the resistance chart. Using a coil with a **LOWER** primary resistance **REQUIRES** an external resistor to bring up the primary resistance to the minimum **OHM** requirements. On applications that use an external ignition box use the coil recommend for the ignition box.

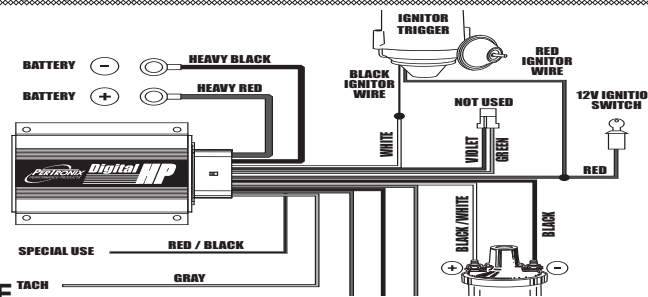
Primary Resistance Specification		
Cylinders	Minimum	Maximum
1-6	3.0 OHMs	4.5 OHMs
8 & 12	1.5 OHMs	3.5 OHMs

Note: When using an external resistor. Add the primary resistance value of coil and external resistor to know total primary resistance. Exp. 1.5(coil)+1.5(resistor)=3.0 OHMs

- The distributor wires can be Cut or Lengthen for wiring. Use 20 gauge wire for lengthening or use **P/N: 2005** (Ignition primary wire Extension kit). Wire terminals are included for connecting to the coil.
- To wire the distributor to a coil, follow the wiring diagrams. Tach. wire will hook to the same location as stock. Applications that use an external ignition box use the **BLACK** wire as the trigger wire and hook the **RED** wire to an Ignition controlled voltage source. Make sure the ignition source turns **ON/OFF** with key and has power while cranking.



Alternative wiring with CD box



STARTING ENGINE

- Recheck all the wires and connections to ensure they are correct. Making sure Ignitor **RED** and **BLACK** are wired per the wiring diagram above, making sure the ignition power source is connected to the positive of the coil.
- Start the engine. If the engine fails to start, rotate the distributor in small increments clockwise or counter wise until engine starts. Note: The Ignitor can move the timing as much as 10° so, even a perfectly timed engine prior to installation might need adjustments.
- Bring the engine to operating temperature. Set initial timing or total timing to the desired setting.